



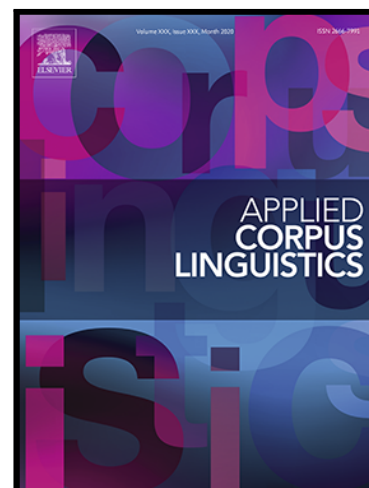
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PII: S2666-7991(23)00019-9
DOI: <https://doi.org/10.1016/j.acorp.2023.100059>
Reference: ACORP 100059



To appear in: *Applied Corpus Linguistics*

Received date: 30 May 2022
Revised date: 27 March 2023
Accepted date: 11 June 2023

Please cite this article as: Dr Kathryn Spicksley , Dr Emma Franklin , Who works on the 'frontline'? Comparing constructions of 'frontline' work before and during the COVID-19 pandemic., *Applied Corpus Linguistics* (2023), doi: <https://doi.org/10.1016/j.acorp.2023.100059>

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Who works on the 'frontline'? Comparing constructions of 'frontline' work before and during the COVID-19 pandemic.

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Abstract

This article provides a comparative analysis of how frontline workers were constructed by the UK media prior to and during the COVID-19 pandemic in the UK. Both the News on the Web Corpus and the Coronavirus Corpus, as monitor corpora of web-based new articles, were utilised to identify changes in both the frequency and use of the word *front*line* from 2010 to 2021. Findings show that, following the outbreak of COVID-19, constructions of frontline work were more frequently associated with medical professions and became more figurative in nature. Our findings provide a counterpoint to claims that the COVID-19 pandemic led to an increased awareness of the critical nature of many types of 'low-skilled' work not previously recognised as essential. The study also extends previous research which has traced changes in language and its deployment during the COVID-19 pandemic.

Keywords

COVID-19; Frontline; Key Worker; WAR Metaphor; Biopolitics; Necropolitics; Discourse Analysis

1. Introduction

1.1. Research Context

The word 'frontline' came to prominence during the COVID-19 pandemic as a way of describing particular occupations that were considered vital to the COVID-19 response (Paul, Bruin & Taylor, 2020; Beames, Christensen & Werner-Seidler, 2021; Musheno, Musheno & Austin, 2021; McLeod, 2022). However, in the UK, the word 'frontline' was never used as an official occupational categorization. Instead, the UK government used the term 'critical workers' to refer to people working in a variety of roles which were considered important to ensure national stability (DfE, 2022).

There is evidence to suggest that identifying as a critical or 'frontline' worker during the COVID-19 pandemic had complex and multi-faceted effects on individuals' mental health

and their responses to others (Sumner & Kinsella, 2021). Those engaged in such work nevertheless perceived distinct hierarchies between different types of critical work (Nyashanu, Pfende & Ekpenyong, 2020; Kinsella, Hughes, Lemon, Stonebridge & Sumner, 2021; May, Aughterson, Fancourt & Burton, 2021), with healthcare roles afforded more public recognition than non-healthcare roles. This hierarchy appears to maintain a divide between healthcare workers and other critical workers whose roles involved lesser exposure to the virus. With the official term ‘critical’ effectively positioning healthcare and non-healthcare roles as equal in importance, unofficial terms like ‘frontline’ provided alternative ways to hierarchically distinguish between different critical workers with different risk profiles.

Hierarchical distinctions between healthcare and non-healthcare roles are appealing to common-sense notions of risk, but it is worth emphasising that they do not reflect the reality of infection, exposure and work during the early months of the COVID-19 crisis in the UK. For example, amongst men in England and Wales, chefs had a higher mortality rate from COVID-19 than nurses (ONS, 2021a). The COVID-19 pandemic had a disproportionate impact on workers from ethnic minority groups, with high-risk occupations staffed by a higher proportion of ethnic minority and migrant workers (Platt & Warwick, 2020; Bowyer & Henderson, 2020), reflecting long-standing sociological and structural healthcare inequalities (Kapilashrami & Bhui, 2020). Furthermore, the mental health consequences of the COVID-19 pandemic disproportionately impacted critical workers in groups beyond healthcare roles, who were often ill-prepared for managing infection control (Bu et al., 2022). Critical workers across a range of occupations suffered negative physical and emotional consequences as a result of their working conditions during the pandemic.

Previous research on the representation of ‘frontline’ workers in the media has suggested that during the pandemic, the criticality of many roles within society was emphasised in ways not previously evident. Following their analysis of articles published in the *New York Times* during the first three months of the COVID-19 pandemic, Musheno et al (2021) argue that COVID-19 opened up “more expansive portrayals of who is on the frontlines and what it means to be engaged in this work” (2021, 34), with migrant workers and workers from ethnic minority groups foregrounded. Similarly, an analysis of 151 articles published in national newspapers in the US found that essential workers in low-wage jobs were valorised as keeping society running, and often contrasted against the experiences of professionals

working from home (Creech et al., 2022). Such research might suggest that a corpus analysis of 'frontline' during the COVID-19 pandemic would reveal an increase in the number or type of occupations associated with the word 'frontline' during the pandemic. The present study, on the contrary, found the opposite – that associations with the word 'frontline' became increasingly restricted to healthcare roles.

Our study therefore contributes to our understanding of how 'frontline' work was constructed in the media during the COVID-19 pandemic. As the media participates in the social construction of identity (Van Dijk, 1991; Fairclough, 1992; De Camargo & Whiley, 2020), the present research is important in understanding how hierarchical constructions of employment were produced and reinscribed as the pandemic progressed, extending previous research in this area (Kerby et al., 2021; Musheno et al., 2021; McLeod, 2022; Farris et al., 2021).

1.2. COVID-19 and Biopolitics

The emergence of occupational hierarchies, particularly during a historical period in which governments and governance were focused on the preservation of life, indicates the deployment of a biopolitical – or necropolitical – apparatus, revealing 'the expendability of particular populations under conditions of risk and uncertainty' (Howard, 2021, 1). Biopolitics, associated primarily with the work of Michel Foucault (1998; 2003), concerns the political management of life: 'to improve life, to prolong its duration, to improve its chances, to avoid accidents, and to compensate for failings' (Foucault, 2003, 254). Through forms of biopolitical governmentality in modern societies, individuals are made responsible for their own health and wellbeing, being encouraged to develop identities and behaviours which will contribute to a healthy population (Foucault, 1998; Dean, 2010). Such approaches are combined with sovereign practices of power which explicitly control or punish those whose behaviour deviates from that which is desired by ruling governments. During COVID-19, the UK government deployed sovereign power in their 'zealous policing of public spaces' (Lupton, 2022, 65). However, biopolitical efforts to manage the population were also evident, and such efforts were highly dependent on constructions of social identity in the media - for example, the public shaming of people who went against social distancing orders (Lupton, 2022).

Biopolitics has been described as a 'politics of *differential vulnerability*' (Lorenzini, 2020, 43, original emphasis). These differential vulnerabilities were particularly apparent during the COVID-19 pandemic, when those employed in certain occupations were able to isolate at home. Scholars following Foucault have termed this aspect of biopolitical governance as 'necropolitics', in which 'vast populations are subjected to conditions of life conferring upon them the status of *living dead*' (Mbembe, 2003, 40, original emphasis). The apparent hierarchies between different occupational groups during the COVID-19 pandemic can be theorised as an exercise in necropolitics - different groups were stratified according to both exposure to COVID-19 and access to personal protective equipment (PPE), resulting in some groups being placed at a much higher risk of mortality from COVID-19. Furthermore, occupational patterns intersect closely with ethnicity, with ethnic minorities overrepresented in key healthcare roles (The Health Foundation, 2020). Media constructions of 'frontline' work and workers contribute to the social imaginaries which justify such political decisions (Sandset, 2021).

1.3. War metaphors and COVID-19

'Frontline' is a loaded term, invoking connotations of war (Stedman, Davies & Heald, 2020; Farris et al., 2021; Kerby, Baguley, Gehrmann & Bedford, 2021). As such, the deployment of 'frontline' has a performative effect that differs qualitatively from other terms used to describe workers during the COVID-19 response, such as 'critical' (Farris et al., 2021). The invocation of the 'war' metaphor in communications around COVID-19 has already been well documented (see e.g. Wicke and Bolognesi, 2020; Semino, 2021; Islentyeva, 2020; Castro Seixas, 2021). In a topic-modelling analysis of more than 200,000 tweets from early 2020 related to COVID-19, Wicke and Bolognesi (2020) found that the WAR frame was the most frequently used figurative frame among all in their study. In the UK, Boris Johnson used terms such as *enemy*, *invader*, *frontline*, and *fight* (Semino, 2021, p. 50), adding that "each and every one of us is *enlisted*" (Johnson, 2020, emphasis added). Metaphorical descriptions of the pandemic as a war have also been notably utilised by Pedro Sanchez (Castro Seixas, 2021), Vladimir Putin (Islentyeva, 2020) and Angela Merkel (Islentyeva, 2020), as well as Xi Jinping, Emmanuel Macron, and Giuseppe Conte (Semino, 2021).

The emergence of 'war' language in the context of COVID-19 is to be expected, given its extensive use in the framing of other viruses and diseases, such as HIV (Nie et al., 2016), Avian flu (de la Rosa, 2007), SARS (Wallis and Nerlich, 2005; Chiang and Duann, 2007),

Zika (Ribeiro et al., 2018) and cancer (Sontag, 1979; Semino, Demjén, Demmen, Koller, Payne, Hardie & Rayson, 2017). The WAR metaphor is not specific to the construal of illnesses, however: a study by Karlberg and Buell (2005) found that 15% of all articles published in *Newsweek* and 17% of all articles published in *Time* magazine between 1981 and 2000 featured at least one war-related metaphor. The “war on X” frame is now so pervasive a metaphor in public communications, claim Flusberg and colleagues, “and so embedded in partisan squabbling, that it is threatening to become a *reductio ad absurdum* against the use of warfare metaphors in public discourse” (Flusberg, Matlock & Thibodeau, 2018, p. 2). There are, however, good reasons for WAR being such a conventional metaphor within communications around COVID-19. War has a strong negative valence and thus helps to express the urgency and necessity of taking quick and decisive action; use of this metaphor also prepares the public for hard times, and encourages unprecedented behaviour change on a national scale (Wicke and Bolognesi, 2020; Castro Seixas, 2021).

Conceptual metaphors – mappings of ‘target’ domains, e.g. the COVID-19 pandemic, onto ‘source’ domains, e.g. war or combat – are useful in that they enable us to conceive of complex, abstract concepts and situations in terms of simple, concrete information. They are most effective when the source domain is salient in the minds of the speakers, when knowledge of the source domain is well known to the linguistic community, and when the comparison between the source and target domain is apt (Flusberg et al., 2018, pp. 3-4; see also Thibodeau and Durgin, 2011). The WAR metaphor for COVID-19 satisfies all of these criteria. However, metaphors have the power to influence the way we think and feel, and there has been significant pushback against the widespread and uncritical use of the WAR metaphor in relation to COVID-19 (Semino, 2021). While the metaphor of WAR helps to convey the seriousness and urgency of the COVID-19 pandemic and may help foster a sense of national solidarity, it could also lead to higher levels of collective anxiety as well as aggression towards those who are believed to be spreading the virus (Islentyeva, 2020, p. 159). Other criticisms of the WAR metaphor for COVID-19 include its “inappropriately personifying the virus as a malevolent opponent” and its “implying that those who die did not fight hard enough” (Semino, 2021, p. 50). The *#ReframeCovid* initiative on Twitter, launched by Paula Pérez-Sobrino and Inés Olza, and championed perhaps most notably by Elena Semino and Veronika Koller, has served to problematise the use of certain metaphors around COVID-19 and to help promote the adoption of other, less fatalistic, framings.

Perhaps most concerning, and most relevant to the present study, is the capacity of the WAR metaphor to normalise and naturalise biopolitical hierarchies. While ‘war’ language will inevitably emphasise the political dimensions of any illness (Flusberg et al., 2018, p. 7), in the context of COVID-19, the WAR metaphor implicitly justifies the sacrifice and valorisation of (some) human beings, such as those on the ‘frontline’, in the name of a national war effort. Those working for long periods without adequate personal protective equipment (PPE) become ‘heroes’, or “collateral damage” (Walker, 2020, p. 265). This framing naturalises the risks posed by COVID-19 rather than foregrounding the responsibility of governments to provide the necessary PPE and COVID-19 test kits (Walker, 2020, p. 267). Ultimately, ‘war’ metaphors “collapse diverse interests and stratifications of people, communities, and states into a single ‘front’, leaving little space to debate the appropriateness, purpose, or morality of the interventions deployed” (Walker, 2020, p. 256).

2. Data and methods

2.1. Research Questions

Informed by findings in the literature, and in order to better understand the use of *frontline* before and after the outbreak of COVID-19, this research is guided by three main research questions (RQs):

- **RQ1:** (How) has the frequency of *frontline* in the UK press changed since the outbreak of COVID-19?
- **RQ2:** What sort of occupations are most associated with the term *frontline* since the outbreak of COVID-19, and how have these changed over time?
- **RQ3:** What discursive patterns can be observed around *frontline* during/since the outbreak of COVID-19?

To try and answer these questions, we have consulted large amounts of UK-based news texts and have used a range of analytical approaches, described throughout the paper. We examine fluctuations in frequency over time and, in particular cases, download and analyse concordance lines for a more detailed view.

2.2. The corpora

The data used in this project is detailed in Table 1. All datasets are derived from two of Mark Davies’ monitor corpora made freely available on *English-Corpora.org*: the News on the Web (NOW) Corpus (Davies, 2017) and the more recent Coronavirus Corpus (Davies, 2021). Full details of both corpora can be found in the Davies papers referenced above, but in short: the NOW Corpus is a constantly-growing corpus of many billions of words gathered from the

newspapers of 20 different countries; and the Coronavirus Corpus is a thematic subcorpus of NOW which is built based on certain Covid-related key term criteria (e.g. mentions ‘COVID-19’, ‘Coronavirus’, and so on). We should reiterate here that the Coronavirus Corpus is itself a *sample* of the very large NOW Corpus, and that our datasets are sampled once again in that they are limited to UK (GB) news texts and have certain timeframe restrictions (Table 1). The fact that NOW is a monitor corpus rather than a static one means that the word count is constantly rising and is not always made available to the user. However, in order to provide some sense of how large the monitor corpus is, in February 2023 the NOW Corpus included more than 16.9 billion words of text, gathered from data sources in 20 countries; the NOW corpus grows by approximately 180-200 million words each month. The Coronavirus Corpus contains about 1.5 billion words of data collected between January 2020 and December 2022, again gathered from 20 countries.

As one of the purposes of the study was to identify how the occupational context of ‘frontline’ work changed over time, we created subcorpora of our CorGB-F *front*line* corpus for each of the ‘waves’ of the pandemic in the UK. Timeframes for each wave were determined by the government publication *Coronavirus (COVID-19) Infection Survey technical article: waves and lags of COVID-19 in England, June 2021* (ONS, 2021b). Table 1 includes the corpus details for each of these ‘wave’ datasets.

Table 1: Corpora used in the present study. NGB and CorGB are time-bound subcorpora of the NOW Corpus and Coronavirus Corpus, respectively, while the other datasets are sampled by time and by inclusion of the term *front*line*. Where a figure is missing in the table, it is not made available by the corpus query interface.

Subcorpus name (<i>acronym</i>)	Timeframe	Sampled from / a subcorpus of	Details	No. texts	No. tokens
NOW GB corpus (<i>NGB</i>)	1 Jan 2010 – 31 Dec 2021	NOW Corpus	All UK texts in the NOW Corpus published within the specified timeframe	-	-
NOW GB <i>front*line</i> corpus, before	1 Jan 2010 – 31 Dec 2019	NOW Corpus	Sample of 8,000 (max. limit) UK texts that mention	8,000	8,197,101

COVID-19 (<i>NGB-F1</i>)			<i>front*line</i> , published within the specified timeframe		
NOW GB <i>front*line</i> corpus, during COVID-19 (<i>NGB-F2</i>)	1 Jan 2020 – 31 Dec 2021	NOW Corpus	Sample of 8,000 (max. limit) UK texts that mention <i>front*line</i> , published within the specified timeframe	8,000	8,839,718
Coronavirus GB corpus (<i>CorGB</i>)	1 Jan 2020 – 1 April 2022	Coronavirus Corpus	All UK texts in the Coronavirus Corpus within the specified timeframe	-	-
Coronavirus GB <i>front*line</i> corpus (<i>CorGB-F</i>)	1 Jan 2020 – 31 Dec 2021	Coronavirus Corpus	All UK texts in the Coronavirus Corpus that mention <i>front*line</i> within the specified timeframe	5,510	7,066,031
GB Wave 1 (<i>CorGB-F1</i>)	1 Mar 2020 – 30 May 2020	Coronavirus Corpus	All UK texts in the Coronavirus Corpus that mention <i>front*line</i> within the Wave 1 timeframe	2,476	2,745,953
GB Wave 2a (<i>CorGB-F2a</i>)	1 Sep – 30 Nov 2020	Coronavirus Corpus	All UK texts in the Coronavirus Corpus that mention <i>front*line</i> within the Wave 2a timeframe	472	614,183
GB Wave 2b (<i>CorGB-F2b</i>)	1 Dec 2020 – 31 Apr 2021	Coronavirus Corpus	All UK texts in the Coronavirus Corpus that	1,096	1,585,630

			mention <i>front*line</i> within the Wave 2b timeframe		
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The corpus search term *front*line* was chosen so as to capture a range of orthographic representations of *frontline* terms (i.e. *frontline*, *front-line*, *front line*) but was also a product of limitations of the *English-Corpora.org* search query syntax. We encountered a negligible number of noisy, i.e., unhelpful, results (i.e. n=12 in CorGB), e.g. *front of the line* and the typo *frontlline*, which did not interfere with our analysis.

2.3. Classifications of critical workers

In order to determine which occupational groups or roles were associated with *front*line* before and during COVID-19 in the UK, we identified collocates of *front*line* in NGB-F1, CorGB-F1, CorGB-F2a and CorGB-F2b (see subcorpus descriptions in Table 1). The collocate search was not limited by part-of-speech (POS), and the raw frequency threshold for consideration was 5.

For each collocation, we used the critical worker groups specified by the UK government (see Table 2) to determine category. We also added two additional categories for ambiguous words which could refer to a number of roles in both critical and non-critical sectors, such as *staff*, and roles which are specific but non-critical, such as *bowler* (Table 2).

Table 2: Codes used for worker categorisation (adapted from DfE, 2022)

CATEGORY	CODE
A	Health and social care
B	Education and childcare
C	Key public services
D	Local and national government
E	Food and other necessary goods
F	Public safety and national security
G	Transport and utilities
H	Communication and financial services
U	Ambiguous or cross-category
X	Non-critical

3. Findings

3.1. Changes in the frequency of *frontline*

In order to address our first research question - which focused on how the frequency of *frontline* had changed in the UK press since the outbreak of the COVID-19 pandemic - we first undertook a frequency analysis of *front*line* in the NOW GB Corpus (NGB). Findings indicate a significant increase in the use of *front*line* in 2020 (Figure 1), an increase most plausibly explained as an effect of the COVID-19 pandemic in the UK.

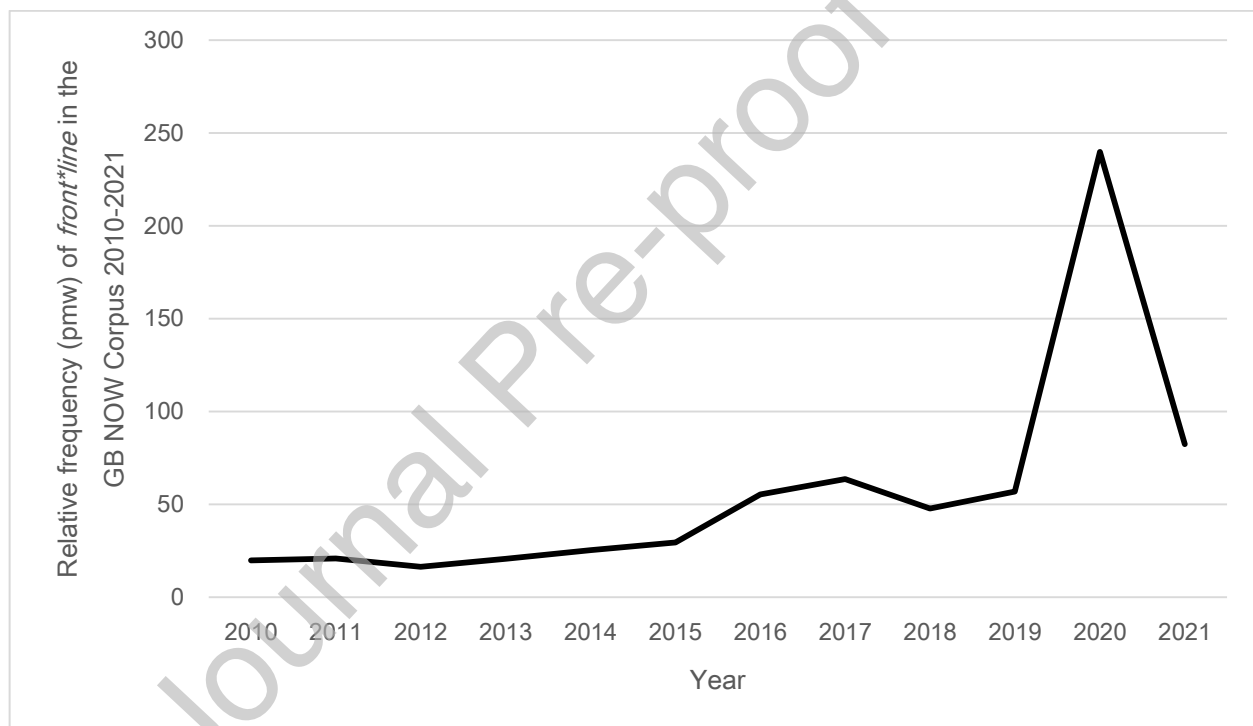
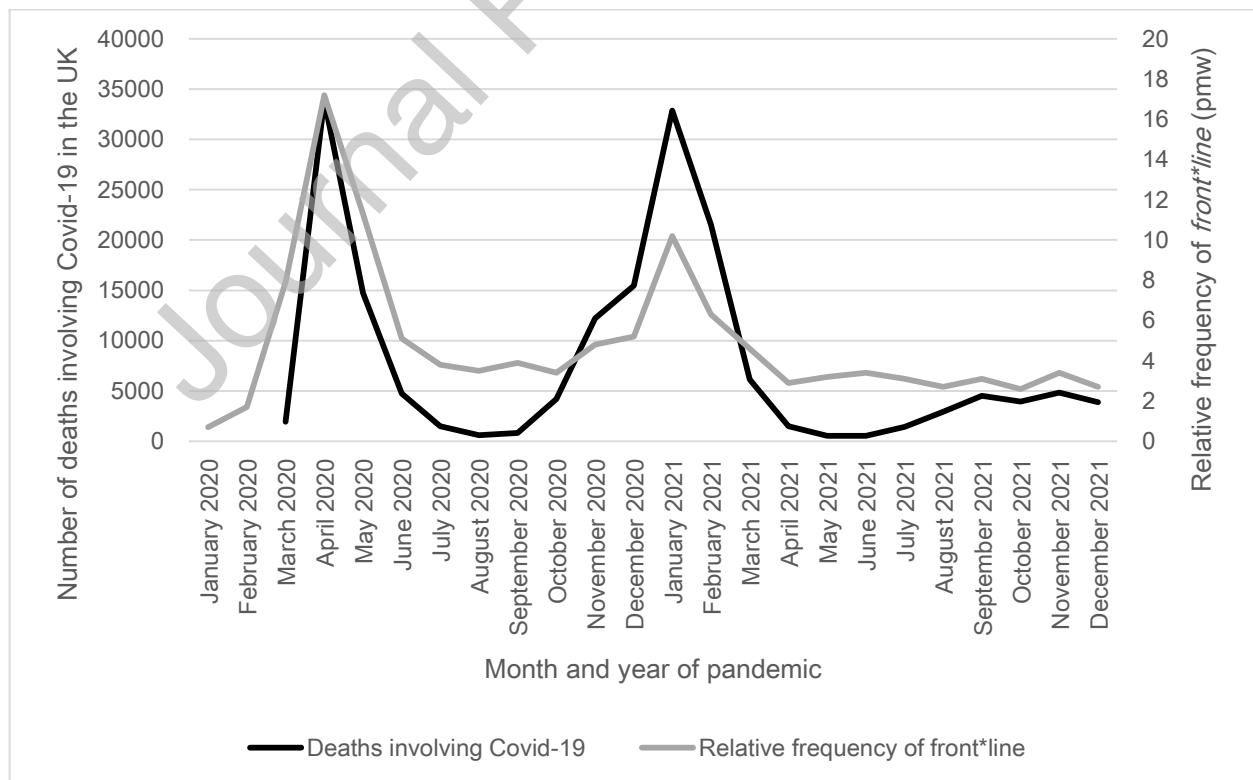


Figure 1: Diachronic changes in use of *front*line* in the NOW GB corpus (NGB) between 1 January 2010 and 31 December 2021

Prior to the COVID-19 outbreak, use of the term *front*line* had increased from a relative frequency of 19.8 per million words (pmw) in 2010 to 56.8 pmw in 2019. The most significant diachronic change during the post-2010 period, however, is the increased use of the term *front*line* in 2020. During this first year of the COVID-19 pandemic, the relative frequency of the term *front*line* in NGB jumped to 239.8 pmw. Also of interest is the rapid decline in the use of the term in 2021, following a year of the pandemic in the UK. In 2021, the frequency

of *front*line* in NGB fell to 82.4 pmw. This frequency does, however, remain higher than frequencies reported prior to the outbreak of COVID-19. It is important here to compare standardised frequencies (i.e. occurrences per million words) rather than raw ones. Raw frequencies are influenced by the overall size of the corpus over time, which is not constant. The number of words in the NOW corpus each month or year is variable.

Alongside investigations into how use of the word *frontline* had changed prior to and following the outbreak of COVID-19, we were also interested in whether there were fluctuations in the deployment of *frontline* during different waves of the pandemic. We therefore explored the relationship between the frequency of *front*line* in the UK press and death rates during the pandemic. Figure 2 shows frequency changes in the use of *front*line* in the Coronavirus GB corpus (CorGB) during the pandemic, between January 2020 and December 2021. These fluctuations are plotted against deaths involving COVID-19¹ between March 2020 and November 2021 (ONS, 2021c). Findings strongly indicate that fluctuations in the use of *front*line* in CorGB were closely linked to the waves of the pandemic in the UK. As the intensity of COVID-19 increased (indicated here by number of deaths), the frequency of *front*line* also increased in the online UK media, as captured by the Coronavirus Corpus.



¹ In this dataset, COVID-19 deaths are defined as 'deaths that had COVID-19 mentioned anywhere on the death certificate, whether as an underlying cause or not' (ONS, 2021c, n.p.)

Figure 2: Fluctuations in deaths involving COVID-19 (ONS, 2022) and relative frequency of *front*line* in the Coronavirus GB corpus (CorGB) during the COVID-19 pandemic in the UK

Figure 2 also indicates that the relationship between use of the word *frontline* and death rates was particularly close in Wave 1 and Wave 2b of the pandemic. These were both points in which high death rates were accompanied by stringent social restrictions (or 'lockdowns') in the UK (Institute for Government, 2021). In contrast, during Wave 2a (September-November 2020), deaths began to increase significantly, but use of *front*line* remained relatively stable. At this point, restrictions on social interaction had been relaxed as the government was attempting, albeit with difficulty, to move out of lockdown. This could suggest that fluctuations in the use of *front*line* in CorGB may be more closely associated with lockdown measures than deaths. Once more stringent social restrictions were imposed in January 2021 (Institute for Government, 2021), use of *front*line* in CorGB spiked again, almost doubling within a month. Use of *front*line* in UK media outlets therefore appears to be linked to the deployment of epidemiological strategies to manage of the population and reduce transmission, as well as death rates.

3.2. Occupations associated with *front*line*

To answer our second research question, we needed to identify which type of occupations associated with the term *frontline* during the COVID-19 pandemic. First, we compared associations with *front*line* prior to and following the outbreak of COVID-19, by comparing data from the NOW and Coronavirus corpora.

Table 3 shows 4L-4R collocates of *front*line* indicating occupation in the NOW GB *front*line* corpus, pre-COVID-19 (NGB-F1). Of 22 relevant collocates, eight (shaded in grey) refer to specific occupations which can be mapped on to the categories of 'critical' workers used during the COVID-19 pandemic. Nine are terms which could refer to one or more categories of workers (category "U"). Five would be categorised as non-critical occupations during the COVID-19 response (category "X").

Table 3: Collocates of *front*line* indicating occupation (4L-4R) in the NOW GB *front*line* corpus (NGB-F1), with a raw frequency ≥ 5

WORD	RAW FREQUENCY	MI SCORE	WORKER CATEGORY
<i>services</i>	1,037	3.58	U

<i>staff</i>	1,004	3.68	U
<i>officers</i>	465	3.32	U
<i>politics</i>	289	4.41	D
<i>workers</i>	262	3.34	U
<i>policing</i>	187	3.60	F
<i>professionals</i>	88	3.60	U
<i>bowlers</i>	35	4.13	X
<i>spinner</i>	33	4.16	X
<i>practitioners</i>	28	3.94	U
<i>clinicians</i>	24	3.75	A
<i>advisers</i>	20	3.75	U
<i>seamers</i>	13	5.45	X
<i>staffers</i>	12	5.76	U
<i>squadrons</i>	12	4.56	F
<i>photojournalism</i>	11	5.16	C
<i>spinners</i>	11	4.25	X
<i>firefighter</i>	10	3.13	F
<i>responders</i>	8	3.49	U
<i>brothels</i>	7	4.98	X
<i>clinician</i>	6	3.73	A
<i>battalions</i>	6	3.00	F

Table 3 indicates the diversity of occupations associated with the word *front*line* prior to the COVID-19 pandemic. The most frequent collocation with *front*line* in NGB-F1 was *politics* (n=289), later categorised as Category D. In terms of worker categories, the most frequent associations appear to be between *front*line* and jobs in public safety and national security (Category F). Examples here include *policing* (n=187), *squadrons* (n=12) and *firefighter* (n=10), as illustrated in concordance lines (1)-(3):

(1) [...] the reality of **frontline policing** for the vast majority of my officers in incredibly challenging (Plymouthherald.co.uk, 03.09.2019)

(2) [...] fellow pilots in **front-line squadrons** need to be able to trust their recommendations (Daily Mail, 06.04.2013)

(3) *No **frontline firefighter** in Greater Manchester has to apologise for anything* (Isle of Wight County Press, 30.03.2018)

Prior to COVID-19, *front*line* was therefore associated with a range of occupations across a number of categories which would, during COVID-19, be identified as critical worker categories. Among these, only two collocations belong unambiguously in category A (Health and Social Care): *clinicians* (n=24) and its singular, *clinician* (n=6), shown in concordance examples (4) and (5):

(4) *This feedback from **clinicians** working at the **frontline** exposes the depths of the crisis facing child and adolescent mental health services* (The Guardian, 26.12.16)

(5) *As a **frontline clinician**, I regularly see young people who have deliberately hurt themselves* (Daily Mail, 29.03.19)

These examples indicate a precedent for Category A (Health and Social Care roles) being associated with frontline work before the pandemic. However, this association was not particularly strong in comparison with other occupational patterns. Prior to COVID-19, the word *front*line* was more frequently associated with politics, policing or work in the armed forces than in healthcare.

As well as comparing associations with frontline before and after the COVID-19 outbreak, we were also interested in whether there were discursive shifts associated with this word as the pandemic progressed. We therefore compared collocates indicating occupation across the three waves of COVID-19, derived from CorGB-F (the three 'wave' subcorpora being CorGB-F1, CorGB-F2a, and CorGB-F2b). This comparison revealed that health and social care workers are the only category of critical worker to be specifically associated with the word *front*line* during the three waves of the Covid-19 pandemic, indicating a strong association between the term *frontline* and health and social care work.

Table 4: Collocates of *front*line* indicating occupation (4L-4R) in the Coronavirus GB *front*line* corpus (CorGB-F), with a raw frequency ≥ 5

WORD	RAW FREQUENCY	MI SCORE	WORKER CATEGORY
WAVE 1 (CorGB-F1)			

<i>workers</i>	1,021	4.35	U
<i>Staff</i>	876	3.60	U
<i>NHS</i>	728	3.02	A
<i>healthcare</i>	135	3.43	A
<i>worker</i>	93	3.62	U
<i>medics</i>	28	3.54	A
<i>responders</i>	17	4.48	U
<i>pharmacists</i>	6	3.53	A
<i>rescuers</i>	5	3.97	U
<i>professions</i>	5	3.40	U
<i>keyworkers</i>	5	3.21	U
WAVE 2A (CorGB-F2a)			
<i>workers</i>	222	4.99	U
<i>Staff</i>	118	4.05	U
<i>NHS</i>	87	3.42	A
<i>healthcare</i>	26	3.69	A
<i>nurses</i>	10	3.37	A
<i>worker</i>	10	3.15	U
WAVE 2B (CorGB-F2b)			
<i>workers</i>	609	5.41	U
<i>health</i>	317	3.54	A
<i>Care</i>	297	3.89	A
<i>Staff</i>	282	3.84	U
<i>social</i>	172	4.14	U
<i>NHS</i>	170	3.42	A
<i>healthcare</i>	83	4.33	A
<i>essential</i>	22	3.28	U
<i>worker</i>	20	3.83	U
<i>carers</i>	15	3.01	A
<i>Jobs</i>	14	3.05	U
<i>medics</i>	13	4.70	A
<i>doctor</i>	11	3.25	A
<i>ambulance</i>	9	3.06	A
<i>Roles</i>	8	3.40	U
<i>clinicians</i>	7	4.95	A

<i>personnel</i>	7	3.10	U
<i>patient-facing</i>	7	5.06	A

Rather than ‘frontline’ work being primarily associated with roles in politics, public safety and national security (as evidenced in NGB-F1), during the pandemic *frontline* became primarily associated with medical roles. This suggests a significant shift in the type of work associated with the term *frontline* as a result of the COVID-19 pandemic. Examples are provided in (6) and (7).

(6) [...] *Jeremy Hunt voiced concerns that some **frontline medics** still did not have enough anti-Covid protective kit* (standard.co.uk, 18.03.2020)

(7) [...] *there has been a lot of deaths to **NHS workers, nurses, doctors, frontline workers**, all of which have been heart-wrenching* (kentonline.co.uk, 29.09.2020)

To verify this shift towards a more medicalised meaning of *front*line* in the UK press generally, and not only in the Coronavirus Corpus, random samples of 300 lines were taken from each of the following three corpora: NGB-F1 (NOW Corpus UK news texts mentioning *front*line*, 2010-2019); NGB-F2 (NOW Corpus UK news texts mentioning *front*line*, 2020-2021); and CorGB-F (Coronavirus Corpus UK news texts mentioning *front*line*, 2020-2021). This was done by exporting the concordance lines from English-Corpora.org to Excel and then using Excel’s *=rand* function to create randomised samples. Concordance lines with *front*line* as the node were manually annotated for their domain (“healthcare”, “non-healthcare”, or “ambiguous”) and their POS (“noun”, “adjective”, or “adverb”). In each sample, there were some lines that were untaggable due to being e.g. single-word headlines or titles of television programmes: 14 lines for NGB-F1, 11 for NGB-F2, and 3 for CorGB-F. The window of available concordance context was used to determine whether or not a *front*line* mention was one of healthcare, non-healthcare, or ambiguous: *frontline doctors*, for example, was marked as unambiguously healthcare-related, while *frontline staff*, without any additional cues as to the specific domain, was classified as ambiguous.

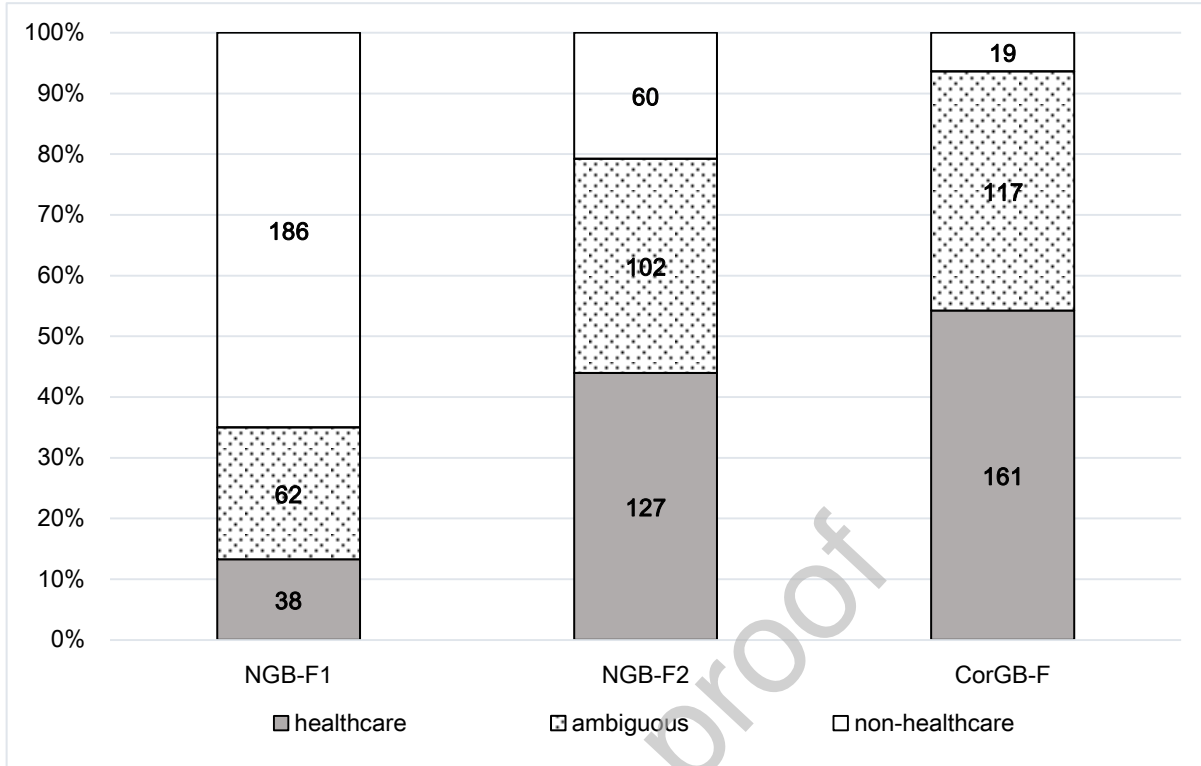


Figure 3: Occupational domains of *front*line* in 300-line random samples taken from NGB-F1, NGB-F2 and CorGB-F

Looking at Figure 3, we can see that in NGB-F1, i.e. pre-COVID-19, the occupational context of *front*line* in the UK press was unambiguously non-healthcare (e.g. military, political) in more than 60% of cases. Following the outbreak of COVID-19, in the NGB-F2 and CorGB-F samples, we see that, conversely, the unambiguously healthcare-orientated mentions of *front*line* are more than three times as common as they were before the pandemic. When we isolate the post-outbreak *front*line* sample to Coronavirus-specific texts (CorGB-F), we see this effect at its strongest. Figure 3 also shows the numbers of ambiguous cases that could not be determined as either healthcare or non-healthcare, and we can see that these kinds of examples also increase significantly from January 2020 and intensify when limiting to just Coronavirus-related news texts. This ambiguity could be intentional (for example, by purposely making reference to all key COVID-19 workers without singling out specific professions) or perhaps could be disambiguated more effectively with more context. However, regardless of the reason, we can see that any mentions of unambiguously non-healthcare domains of *front*line* are now outnumbered by other, mainly healthcare-related, mentions in the UK media.

3.3. Notable discursive patterns and shifts around *front*line*

As well as identifying frequency changes around *frontline* and changes in occupation associated with *frontline*, our third research question allowed us to explore other notable shifts in the discourse around the term *frontline*. We identified two discursive shifts which we believe to be of note. First, there appears to be an increase in the proportion of adjectival deployments of *front*line* following the outbreak of COVID-19. Second, before COVID-19 there was a strong association between *front*line* and *services* which, following the outbreak of COVID-19, was replaced by an association between *front*line* and *workers*. These two discursive patterns are discussed below, in turn, in more detail.

Comparing the parts of speech of *front*line* across these corpus samples, there is a very slight increase in the proportion of instances of *front*line* as a noun adjunct (Figure 4).

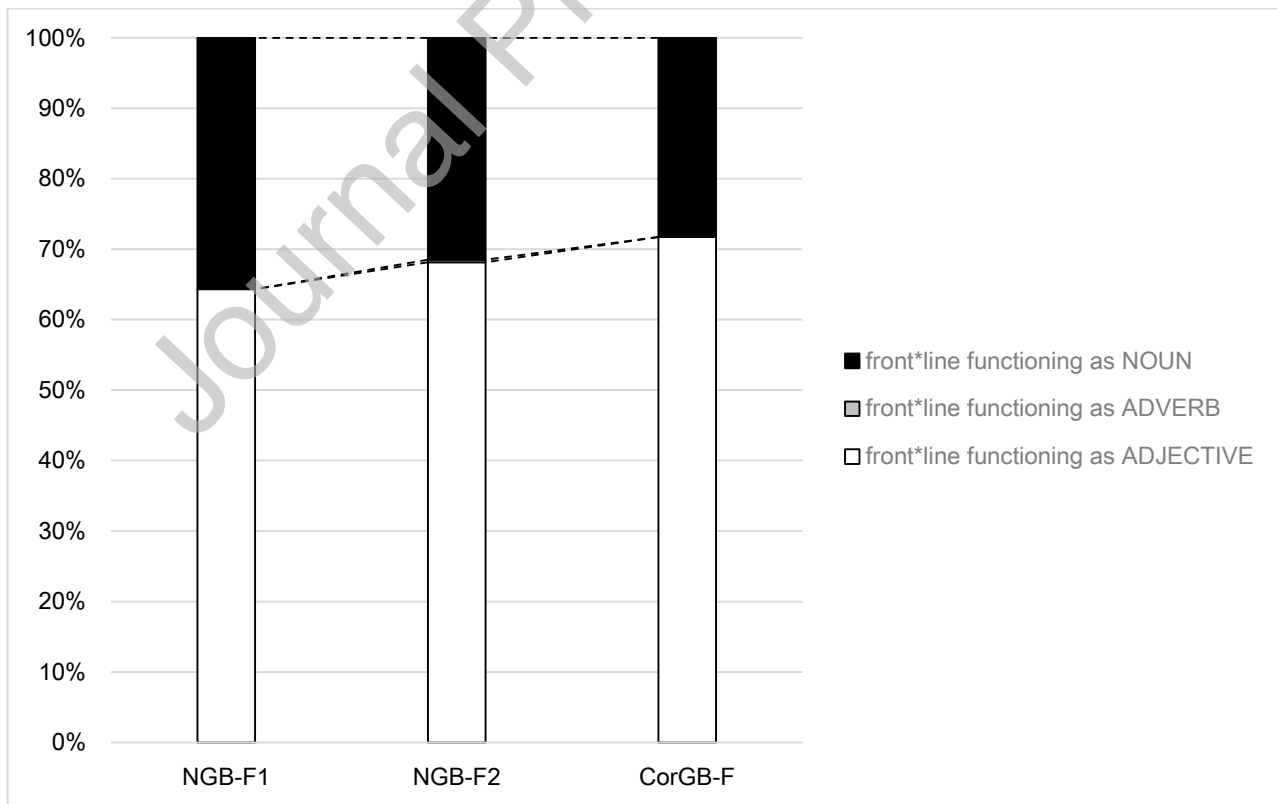


Figure 4: The parts of speech (POS) of *front*line* in 300-line random samples taken from NGB-F1, NGB-F2 and CorGB-F

By comparing our sample taken from the pre-pandemic subcorpus NGB-F1, and the two subcorpora taken during the pandemic (NGB-F2 and CorGB-F), we see a slight but clear increase in *front*line* as an adjective (or as a noun adjunct, functioning as an adjective by modifying the noun, as in example 8).

(8) *TikTok has donated £5 million to a nursing fund supporting **frontline** health workers* (thenorthernecho.co.uk, 18.04.20; NGB-F2)

In the NGB-F2 sample, there was just one rare example of *frontline* as an adverb (9), rendering it almost invisible in Figure 4.

(9) [...] *this gin has been designed by those who have worked **front-line** in the industry* (pressandjournal.co.uk, 12.06.20; NGB-F2)

The tendency towards modifying instances of *front*line* (where *front*line* functions as an adjective) could be indicative of a slight shift towards the abstract (e.g. *frontline agencies*) rather than concrete (e.g. *on the frontline*) sense of the word in the UK press. However, there are still a significant number of cases in which *the frontline* is being conceptualised nominally and somewhat concretely, i.e. as a literal place (example 10) and the forefront of an actual war zone (11).

(10) [...] *can not ask health workers to go **on to the frontline** without adequate protective equipment* (countypress.co.uk, 29.03.20; CorGB-F)

(11) *“Obviously, all of us are at home and those guys are out **on the frontline, fighting this war,**” Zara said of the doctors and nurses working around the clock **to protect the British people*** (ibtimes.co.uk, 24.04.20; CorGB-F)

Such nominal expressions are especially supportive of the WAR metaphor as they reify *the frontline* as a literal space. Occurrences where *front*line* functions as an adjective, on the

other hand, emphasise and foreground the head of the noun phrase they modify (i.e. *staff*, *worker*, *doctor*).

Returning to Table 3 and Table 4, a strong association between *front*line* and *services* is apparent in NGB (Table 3), whereas in CorGB-F1, CorGB-F2a and CorGB-F2b the most frequent association observed is between *front*line* and *workers*. This suggests a significant discursive shift as a result of the COVID-19 pandemic.

The association between *front*line* and *services* in NGB can be seen in examples (12) and (13).

(12) *Our approach throughout austerity has been to protect **frontline services** as far as possible* (Itv.com, 06.09.2019)

(13) *It is vital that savings are made in order to protect **frontline services*** (theregister.co.uk, 26.08.2019)

Use of the word *services* has the effect of foregrounding the service itself, rather than the worker providing the service. The relationship between *front*line* and *services* in NGB-F1 could potentially be explained by the discourse of austerity, which dominated political debate following the election of the Conservative-Liberal Democrat 'Coalition' government in 2010 and subsequent Conservative governments (see Grundmann et al., 2017). When the *service* itself is foregrounded in discussions of cuts, damage caused by economic austerity is primarily constructed as having an impact on abstract entities or institutions, rather than human individuals. In this way, the damage to workers caused by austerity is rendered less apparent.

In contrast, *workers* is the most frequent collocate indicating occupation across all three subcorpora of CorGB analysed (CorGB-F1, CorGB-F2a and CorGB-F2). Use of *workers* foregrounds the human workers themselves, rather than the service they are providing or the service user. Examples (14) and (15), extracted from CorGB-F1, demonstrate how *frontline* workers were humanised in online media discourse during the COVID-19 pandemic.

(14) *[...] emotional applause in appreciation at the brave work of our healthcare **workers** on the COVID-19 **frontline*** (express.co.uk, 30.03.2020)

(15) *Fund for LA for COVID-19 response in support of undocumented **workers**, children of **frontline** health **workers** and first responders* (ibtimes.co.uk, 11.04.2020)

Rather than workers' actions being framed around 'services', readers are told of the bravery required to work in such conditions and are reminded of the workers' families. In these cases, the humanity of the critical worker is foregrounded, rather than their capacity to provide a service to others. A similar trend can be observed with the word *staff*, see examples (16)-(18).

(16) *Deliveroo will make half a million meals free to NHS **staff** on the coronavirus frontline* (thesun.co.uk, 30.03.2020)

(17) *[...] the supply of Personal Protective Equipment (PPE) to NHS **staff** on the frontline continued to cause concern yesterday* (sundaypost.com, 15.04.2020)

(18) *[...] empty kitchens to feed the homeless, vulnerable and NHS **staff** on the frontline* (bristolpost.co.uk, 04.05.2020)

These concordance lines are examples of a discourse in which critical workers – and specifically *NHS staff* – are constructed as in need of sustenance and protective equipment. This is in contrast to pre-pandemic discursive constructions of *frontline* work, in which the service itself was placed at the centre of the discourse. Note, too, that in all three of these examples the staff in question are placed *on the frontline*, strengthening the conceptualisation of hospitals as warzones, and thus increasing the cognitive salience of an ongoing WAR metaphor.

4. Discussion

This study has explored how the term *front*line* was deployed in the UK media prior to and during the COVID-19 pandemic, contributing to a growing body of research which attempts to map and make sense of linguistic changes during COVID-19.

Our study indicates a close relationship between the frequency of *front*line* in media discourse and the intensity of the COVID-19 pandemic. Analysis of NGB shows a significant

increase in the frequency of *front*line* in 2020, aligning with Musheno et al. (2021) who identified an increase in references to 'frontline' work in the *New York Times* since the outbreak of COVID-19. Our findings therefore extend previous research on the use of *frontline* in media reports during COVID-19 and indicate similarities between use of the word in the UK and American press. Furthermore, analysis of the CorGB corpus shows that during the Coronavirus pandemic, use of *front*line* fluctuated, with peaks in the use of *front*line* associated with waves of the pandemic and increased social restrictions. During lulls of the pandemic, when deaths reduced and social restrictions were eased, use of *front*line* in online media reportage also decreased. This finding supports Farris et al., who argues that the term *frontline* 'operated as a performative frame' (2021, 284), deployed to strengthen civil unity, encourage adherence to lockdown restrictions, and to justify exposing critical workers to increased risk and worsening employment conditions during the pandemic response. Farris et al.'s analysis is consistent with a biopolitical reading of how critical work was positioned during the pandemic, providing a rationale as to why the frequency of *front*line* was not steady, but instead increased as waves of the pandemic intensified.

Our findings confirm that, following the outbreak of COVID-19, *front*line* was more frequently associated with healthcare roles than other critical occupations within online UK media. This finding provides key contextual information which may explain the negative emotions experienced by critical workers as identified in the psychological literature (Nyashanu et al., 2020; Kinsella et al., 2021; May et al., 2021). The frequent association of *front*line* with healthcare roles may also explain why some of the benefits afforded to healthcare workers during the COVID-19 pandemic - such as extended shopping hours - were not accessible to critical workers more generally (Kinsella et al., 2021). This finding is consistent with other research that has identified a media focus on critical healthcare roles during the pandemic (Kyriakidou et al., 2021; Musheno et al., 2021). Such findings provide a counterpoint to arguments that the pandemic led to a greater awareness of the critical nature of 'low-skilled' labour such as cleaning and retail jobs, and the difficulties faced by workers in these roles (Musheno et al., 2021; Creech et al., 2022). Paul et al. (2020) and Beames et al. (2020) have argued that the contributions of certain categories of critical workers, such as social workers and teachers, have been forgotten during the pandemic as a result of the focus on healthcare workers, and our research appears to validate such claims.

Our research also suggests a semantic shift in the term *front*line* in the UK media, as indicated by an increase in the proportion of adjectival (as opposed to nominal) uses

following the outbreak of COVID-19. We argue that the phraseological patterning of frontline is visibly changing (see Authors, 2022) to be in favour of more abstract and adjectival usage. This shift to the abstract not only serves to foreground the noun being modified (e.g. the *worker*, rather than the *frontline* itself), but also suggests that the meaning of the word *frontline* is potentially being changed as a result of the COVID-19 pandemic. In other words, not only are healthcare workers being semantically coerced into the category of ‘soldier’ or ‘hero’ as a result of being co-opted in a very heavily deployed WAR metaphor, but it is possible that the reverse effect is also taking place. The meaning of frontline itself may be experiencing lasting – even if only slight – change as a direct result of recent historical events. Whether this figurative exploitation of *frontline* overtakes the literal norm remains to be seen, but given the longevity of the COVID-19 virus, we might expect this new, dominant sense of the word to remain in everyday usage.

Given these changes in the deployment of *frontline*, our findings support literature that has theorised the management of COVID-19 as an exercise in biopolitics (Lorenzini, 2020; Lupton, 2022). Prior to the pandemic, roles in public safety and national security were frequently associated with the word *front*line*. Such associations construct the most significant risks to society as threats to public safety and security (from sources both within and beyond the state). The onset of COVID-19, however, resulted in a significant discursive shift indicating a reappraisal of how risks to the state were understood during this period. Healthcare occupations became the roles most strongly associated with *front*line*, with illness and disease suddenly becoming positioned as the main risk to society. During the pandemic, this changed conception of risk meant the responsibility for lowering mortality was placed on different occupational groups. Our findings support and extend those of Farris et al. (2021) and Lohmeyer et al. (2021), who have previously argued that the invocation of military language and the WAR metaphor served to justify and normalise the increased risk of mortality and illness faced by critical workers during COVID-19.

Mbembe’s post-Foucauldian theorisations of necropolitics are relevant to our understanding of how different categories of workers were positioned by the media during the COVID-19. Mbembe (2003) concerns himself with a discussion of ‘under what practical conditions is the right to kill, to allow to live, or to expose to death exercised?’ (12). Our findings suggest that, during COVID-19, risk of exposure to death – figuratively constructed as ‘frontline’ work – was strongly and almost exclusively associated with occupations in healthcare roles. Discursive constructions of ‘frontline’ work are performative, working on the subjectivities of individuals. For those working in healthcare professions, identifying as brave or heroic gave

a sense of pride which helped them to overcome some of the negative emotions involved in their work during COVID-19 (Kinsella et al., 2021). The use of 'war' metaphors, and specifically the word *frontline*, was therefore part of a biopolitical apparatus which normalised increased risk to certain occupational groups, as part of wider efforts to protect the general population from harm. Mbembe's (2003) conflation of necropolitical strategies with racism is particularly relevant to the COVID-19 context, considering the disproportionate number of ethnic minority workers who are employed in healthcare roles (The Health Foundation, 2020).

5. Conclusion

This study has explored use of the word *front*line* in UK online media texts before and during the COVID-19 pandemic. The findings are perhaps unsurprising, in that they indicate a strong association between *front*line* and healthcare roles during COVID-19 which was less evident prior to the pandemic. These findings confirm the known concerns of non-healthcare critical workers that their contribution to the pandemic effort - and their exposure to risk during this critical period - was not fully recognised. As argued in the literature, the word *front*line* has a performative effect, and foregrounding jobs in healthcare as *front*line* work impacts negatively on critical workers beyond healthcare. Many critical workers were placed at increased risk of both physical and mental health problems as a result of COVID-19 (ONS, 2021a; Bu et al., 2022). However, the performative deployment of *front*line* in media discourse served to normalise this exposure in different ways, constructing a hierarchical distinction between critical workers in healthcare and non-healthcare roles.

Specifically, our work has contributed to the literature evidence of a discursive shift in the use of the term *front*line*. We have shown that frequency fluctuations of *front*line* in the media were strongly associated with numbers of COVID-19-related deaths and epidemiological control measures. *Front*line* has taken on a slightly stronger tendency to function as an adjective rather than a noun, serving to foreground the noun phrase head, typically *workers* and *staff* rather than *services*, and becoming less associated with a literal (e.g. military) frontline. Furthermore, *Front*line* is statistically attracted to different 'occupation' terms prior to and following the outbreak of the COVID-19 pandemic.

The present study was limited in a number of ways. In terms of how we have sampled online media discourse, we have relied entirely on the NOW Corpus and Coronavirus Corpus (itself a subcorpus of the NOW Corpus), and the platform *English-Corpora.org*. Using the platform

has many advantages, particularly when it comes to comparing diachronic changes in the use of words. However, accessing the corpora through the online platform rather than downloading the corpora limited the number of texts we could include in our subcorpora of the NOW Corpus to a sample of 8,000. Furthermore, the platform has limited capacity to sort and analyse concordance lines, or to check the meaning of concordance findings by accessing and reviewing the whole text. More broadly, we have restricted our analysis of *front*line* to online media articles by using these corpora, ignoring constructions of such work in other types of texts. Future research should also isolate discursive patterns around the word *front*line* in political and cultural texts, examining similarities and differences across genres.

Despite its limitations, the findings of this study have potential implications for our understanding of the reporting of future crises. We found that media constructions of 'frontline' workers during the COVID-19 pandemic strongly foregrounded the work of those in healthcare. This necessarily lessened the visibility of those in other critical roles. Such discursive patterns are likely to have an impact on how the public understand critical work, in turn changing the way that workers conceptualise the importance of their own work and the work of others.

Funding

This work was partially supported by a British Educational Research Association (BERA) Career Development Grant.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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